

# Optical Sensor and optical process for the characterization of a chemical and/ or bio-chemical substance

## Abstract

The optical sensor contains an optical waveguide (1) with a substrate (104), waveguiding material (105), a cover medium (106) and a waveguide grating structure (101-103). By means of a light source (2), light can be emitted to the waveguide grating structure (101-103) from the substrate side and/or from the cover medium side. (101-103). With means of detection (11), at least two differing light proportions (7-10) radiated from the waveguide (1) can be detected. For carrying out a measurement, the waveguide can be immovably fixed relative to the light source (2) and the means of detection (11). The waveguide grating structure (101-103) itself consists of one or several waveguide grating structure units (101-103), which if so required can be equipped with (bio-)chemo-sensitive layers. The sensor permits the generation of absolute measuring signals.